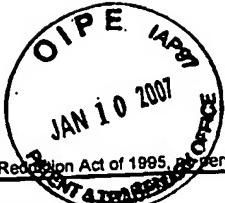


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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

5

Complete if Known

Application Number	10/771,331
Filing Date	February 5, 2004
First Named Inventor	Orlaw MASSLER
Art Unit	1762
Examiner Name	K. Stouffer
Attorney Docket Number	080313.48830D1

U.S. PATENT DOCUMENTS

Examiner Initials'	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)	(if known)			
/KMS/	AA	US- 4,992,153		02/12/1991	Bergmann et al.	
	AB	US- 5,556,519	A	09/17/1996	Teer	
	AC	US- 5,629,086	A	05/13/1997	Hirano et al.	
	AD	US- 5,695,832	A	12/09/1997	Hirano et al.	
	AE	US- 5,709,784	A	01/20/1998	Braendle et al.	
	AF	US- 5,712,000	A	01/27/1998	Wel et al.	
	AG	US- 5,750,210	A	05/12/1998	Schmidt et al.	
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	AK	US- 2003/0091742	A1	05/15/2003	Forget et al.	
	AL	US- 5,015,494		05/14/1991	Yamazaki	
	AM	US- 4,973,494		11/27/1990	Yamazaki	
	AN	US- 4,869,923		09/26/1989	Yamazaki	
	AO	US- 4,877,505		10/31/1989	Bergmann	
	AP	US- 6,171,454	B1	01/09/2001	Weber et al.	

Examiner Signature

/Kelly Stouffer/

Date Considered

03/29/2007

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			Application Number	10/771,331
			Filing Date	February 5, 2004
			First Named Inventor	Orlaw MASSLER
			Art Unit	1762
			Examiner Name	K. Stouffer
Sheet	2	of	5	Attorney Docket Number

FOREIGN PATENT DOCUMENTS							
Examiner Initials'	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴	Kind Code ⁵ (if known)				
/KMS/	AQ	DD 133688		01/17/1979	Siehe		
	AR	DE 195 13 614 C1		10/02/1996	Fraunhofer GES Forschung et al.		ABS
	AS	DE 196 35 736 C2		03/05/1998	Saxonia Umformtechnik GmbH	Corresponds to AH	ABS
	AT	DE 197 40 793 A1		03/18/1999	Robert Bosch GmbH	Corresponds to AI	ABS
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	AW	DE 38 76 120 T2		06/24/1993	Semiconductor Energy Laboratory Co., Ltd.	Corresponds to AL, AM & AN	ABS
	AX	DE 41 26 652 A1		02/18/1993	Krupp Widia GmbH		ABS
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	AZ	EP 0 306 612 A1		03/15/1989		Corresponds to AO	
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	BB	EP 0 413 853 B1		02/27/1991	Balzers Hochvakuum		ABS
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	BJ	WO 97/34315 A1		09/18/1997	Balzers Aktiengesellschaft	Corresponds to AE	ABS
	BK	WO 99/14390 A3		03/25/1999	Robert Bosch GmbH	Corresponds to AQ	ABS
	BL	WO 99/27893 A2		06/10/1999	Teer Coatings Limited		

Examiner Signature	/Kelly Stouffer/	Date Considered	03/29/2007
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				Application Number	10/771,331
				Filing Date	February 5, 2004
				First Named Inventor	Orlawa MASSLER
				Art Unit	1762
				Examiner Name	K. Stouffer
				Attorney Docket Number	080313.48830D1
Sheet	3	of	5		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/KMS/	BM	K. TAUBE, "Carbon-based coatings for dry sheet-metal working", Elsevier Science S.A., Surface and Coatings Technology, 1998, vol. 98, pp. 976-984	
	BN	A. A. VOEVODIN et al., "Design of a Ti/TiC/DLC/ functionally gradient coating...", Elsevier Science S.A., Thin Solid Films, 1997, Vol. 298, pp. 107-115	
	BO	Y. LIFSHITZ, "Diamond-like carbon - present status", Elsevier Science S.A., Diamond and Related Materials, 1999, Vol. 8, pp. 1659-1676	
	BP	ALFRED GRILL, "Diamond-like carbon: State of the art", Elsevier Science, S.A., Diamond and Related Materials, 1999, Vol. 4, pp. 428-434	
	BQ	J. DENG et al., "DLC multilayer coatings for wear protection", Elsevier Science S.A., Diamond and Related Materials, 1995, pp. 936-943	
	BR	W. HEINKE et al., "Evaluation of PVD nitride coatings, using Impact, scratch and Rockwell-C adhesion tests", Elsevier Science S.A., Thin Solid Films, 1995, Vol. 270, pp. 431-438	
	BS	K. Y. LI et al., "Mechanical and tribological properties of diamond-like carbon films prepared on Steel by ECR-CVD process", Elsevier Science S.A., Diamond and Related Materials, 2001; Vol. 10, pp. 1855-1861	
	BT	T. MICHLER et al., "Mechanical properties of DLC films prepared by bipolar pulsed DC PACVD", Elsevier Science S.A., Diamond and Related Materials, 1998, Vol. 7, pp. 1333-1337	
	BU	B. ORAL et al., "Adhesion and structural changes of multi-layered and multi-doped a-C:H films during annealing ", Elsevier Science S.A., Diamond and Related Materials, 1996, Vol. 5, pp. 932-937	
	BV	M. GRISCHKE et al., "Variation of the wettability of DLC-coatings by network modification using silicon and oxygen", Elsevier Science S.A., Diamond and Related Materials, 1998, Vol. 7, pp. 454-458	
V	BW	M. GRISCHKE et al., "Application-oriented modifications of deposition processes for diamond-like carbon based coatings", Elsevier Science, S.A., Surface and Coatings Technology, 1995, Vol. 74-75, pp. 739-745	

Examiner Signature	/Kelly Stouffer/	Date Considered	03/29/2007
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		Attorney Docket Number	080313.48830D1
Sheet	4	of	5

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/KMS/	BX	T. MICHLER et al., "Continuously deposited duplex coatings consisting of plasma nitriding and a-C:H:Si deposition", Elsevier Science S.A., Surface and Coatings Technology, 1999, Vol. 111, pp. 41-45
	BY	PHILIP M. RICE et al., "Correlation of Nanoindentation and Conventional Mechanical Property Measurements", IBM Almaden Research Center, San Jose, CA, USA/Oak Ridge National Laboratory, Oak Ridge, TN, USA
	BZ	T. MICHLER et al., "DLC Films deposited by bipolar pulsed DC PACVD", Elsevier Science S.A., Diamond and Related Materials, 1998, Vol. 7, pp. 459-462
	CA	K. TAUBE et al., "Improvement of carbon-based coatings for use in the cold forming of non-ferrous metals", Elsevier Science S.A., Surface and Coatings Technology, 1994, Vol. 68-69, pp. 662-668
	CB	D. HOFMANN et al., "Plasma-booster-assisted hydrogenated W-C coatings", Elsevier Science S.A., Surface and Coatings Technology, 1995, Vol. 73, pp. 137-141
	CC	U. MUELLER et al., "Pores in hydrogenated amorphous carbon films on stainless steel", Elsevier Science S.A., Surface & Coatings Technology, 1995, Vol. 71, pp. 233-238
	CD	C. DONNET, "Recent progress on the tribology of doped diamond like and carbon alloy coatings: a review", Elsevier Science S.A., Surface and Coatings Technology, 1998, Vol. 100-101, pp. 180-186
	CE	A. VARMA et al., "Tribological Behaviour of Si-DLC Coatings", Surface Engineering, 1999, Vol. 15, No. 4, pp. 301-306
	CF	VON H. DIMIGEN, "Neue Ansätze zur wirtschaftlichen Fertigung optimierter Schichtsysteme", Fraunhofer Institut für Schicht- und Oberflächentechnik IST, Galvanotechnik, Heft 5, 1998
↓	CG	A. HIEKE, "Diamantähnliche Kohlenstoffschichten (DLC) – verschleissfest und reibarm", Materialwissenschaften und Werkstofftechnik, 2000, Vol. 31, pp. 625-628

Examiner Signature	/Kelly Stouffer/	Date Considered	03/29/2007
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Sheet	5	of	5	Filing Date	February 5, 2004
				First Named Inventor	Orlawa MASSLER
				Art Unit	1762
				Examiner Name	K. Stouffer
				Attorney Docket Number	080313.48830D1

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/KMS/	CH	"Hardness Conversion Chart", NDT Resource Center, Hardness Testing, ASM Internationals, Metals Park, OH, 1987
	CI	VON U. MUELLER et al., "Ultrahartstoff-Beschichtungen aus Kohlenstoff", Oberflaechen Werkstoffe
	CJ	T. KRUMPIEGL, (Lehrstuhl fuer Konstruktionstechnik) "Vermeidung von Schmierstoffen in Gelenklagern durch PVD-Beschichtungen", Bundesministerium fuer Bildung, Wissenschaft, Forschung und Technologie, Abschlussbericht 1997
	CK	"Produktnamenverzeichnis-Kohlenstoffschichten", Fraunhofer Institut fuer Schicht und Oberflaechentechnik, 2006
	CL	A. HAMMER et al., "Physikalische Formeln und Tabellen", J. Lindauer Verlag, 5., Seite 42-43, Auflage, 1992
	CM	RENÈ A. HAEFER, "Oberflaechen - und Duennschicht-Technologie", Teil 1, Springer-Verlag Berlin Heidelberg New York, 1987
	CN	"Metallic and other inorganic coatings – Vickers and Knoop microhardness tests", Mikrohaetepruefungen nach Vickers und Knoop, DIN EN ISO 4516, pp. 1-16 (2002)
	CO	"Coating (CVD, PVD) of cold forging tools", Beschichten von Werkzeugen der Kaltmassivumformung CVD-und PVD-Verfahren, VDI 3198, pp. 1-8 August 1992
↓	CP	"PVD and CVD hard coatings – quality assurance Inspection planning of hard coatings", Qualitaetssicherung bei der PVD – und CVD-Hartstoffbeschichtung, VDI 3824 Blatt 4, S. 12, Abs. 4.4, pp. 1-10 September 1999
	CQ	European Search Report dated September 3, 2003 with an English translation of the pertinent portion (Five (5) pages).

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